

MCS®
Series

Modular Component Systems

Belt Driven Turntable

Owner's Manual



Dear Penney Customer:

The product you have purchased has been carefully engineered and manufactured to give you dependable operation. Read this handbook before operating your unit to become familiar with its features, and assure your obtaining the performance that will bring you continued enjoyment for many years.

In the event you require technical assistance please contact your local J.C. Penney store or catalog desk. Retain this handbook for future reference.

In the spaces provided below, record the model and serial numbers located on the back of the turntable cabinet.

MCS® Modular Component Systems

Series Belt Driven Turntable

Model _____ SN _____

Retain this number for future reference.

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Features

① Fully-Automatic Operation

All operations in this **MCS®** Series turntable are completely automatic. The program function enables the user to enjoy manual play, automatic-start, automatic-return, automatic-stop, one record continuous or repeated play from one to six times, and multiple play from one to six records. All mechanical movements are accurate and silent.

② Electronic Speed Switching

Even though this turntable is belt-driven, gone is the old conventional pulley type speed changing mechanism. Speed switching in this unit is fully electronic, thereby adding to the high degree of mechanical precision and reliability.

③ Variable Pitch Control

Adjusts speed accurately in case there is any change in the turntable platter revolutions. This control knob can be "fine-tuned" within a range of 6%.

④ Illuminated Stroboscope

Stroboscope markings on the platter edge are illuminated by a built-in strobo lamp for easy visibility. When one line of markings seems to stand completely still, the platter is rotating at precisely the rated speed.

⑤ Bias

Bias counteracts side thrust; simply set the dial scale to the same value as the tracking force.

⑥ Viscous-Damped Cueing

Your tonearm will land exactly at the spot you desire on a slow, smooth descent prevents the stylus from dropping on the record.

⑦ Hinged, Detachable Dust Cover

Prevents dust from accumulating on platter or records. Also when the dust cover is down, helps prevent the cartridge from "bouncing" which can be caused by changes in air movement, speaker sound radiation, etc.

WARNING...

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

Caution

Never connect the AC power plug before assembly has been completed.

■ **Do not grasp or hold the tonearm during operation of the automatic mechanism.**

■ **Never set the "program" knob or touch the tonearm during automatic cycle (auto-start, auto-stop or change cycle).**

Wait until the tonearm has returned to the arm rest, or has descended to the record and resumed play.

■ **Records having sizes other than 17 cm and 30 cm (7" and 12") should be played manually.**

Your turntable is designed for automatic handling of records that adhere to accepted industry dimensions. Therefore, use the unit manually for records other than standard sizes.

Note:

Warped records or those especially thinner or thicker than standard should also be played manually only.

If such records are used for multiple-play operation, two records may drop simultaneously, or the record may not drop at all.

■ **In the case of multiple-play, be sure to use records of the same size.**

■ **Use the cueing lever only for single-play operation (one record only).**

■ **Power source**

It is very dangerous to use this unit at a voltage which is different from the rated voltage.

There is danger of combustion if the unit is connected to a power source which is different from the rated voltage.

Be very careful concerning this point.

The correct voltage for this turntable is 120 V AC, 60 Hz.

■ **Direct current cannot be used.**

There are some places, such as ships, where direct current is used as the power source. Before connecting the unit, confirm the power source.

■ **Connection of power cord.**

Wet hands are dangerous.

Be sure to never touch the power cord with wet hands because there is danger of electric shock. This is true, of course, of all electric equipment.

■ **Never pull the power cord to disconnect it. Always pull the plug of the cord only.**

■ **Location of unit.**

Choose a place which is not in direct sunlight.

Select a place which will assure good ventilation.

■ **Never place heating equipment nearby.**

Be sure to keep stoves and other sources of heat away from this unit, because heat radiated by such equipment may cause deformation of plastic parts or damage the cabinet, or, at worst, cause a fire.

■ **Especially for families with children.**

Take care that no small items, such as metal objects, are put inside this unit.

In addition, children should be especially warned not to put anything into the ventilation holes, such as toys or a screw-driver, because these things may cause an electric shock or result in a malfunction of the unit.

■ **If water spills on the unit.**

If water should happen to spill on the unit, from an overturned vase for example, there is danger of fire or electric shock. Disconnect the power plug from the electric outlet immediately, and contact the store from which the unit was purchased.

■ **Reconstruction can cause accidents.**

Absolutely never try to remodel, reconstruct or repair this unit yourself. Do not attempt to touch any internal parts because to do so may result in an electric shock or other accident.

■ **Be sure the power is off.**

After you have finished using this unit, check once more to be sure that the power is off. If the unit is left with the power on for a long period of time, it may not only be damaged, thus shortening its useful life, but may also lead to a dangerous accident.

Preparation for use

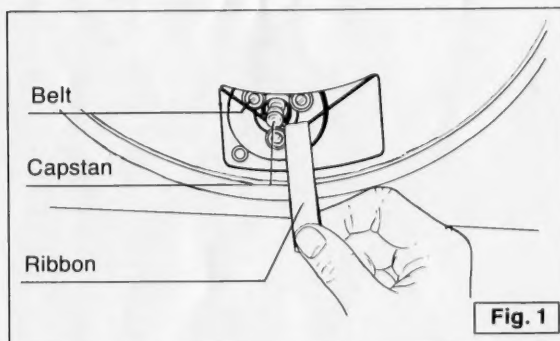
Attach the dust cover last, so that assembly has been completed.

■ Checklist of parts

Turntable unit	1
Turntable platter	1
Belt	1
Turntable mat	1
Dust cover	1
Multiple-play spindle	1
Single-play spindle	1
45-rpm adaptor	1
(for single-play)	
Balance weight	1

■ Installation of turntable platter

1. Place the turntable platter on the center spindle.
2. Attach the belt to the capstan using the ribbon as shown in the picture. Then, remove the ribbon. (See Fig. 1.)
3. Place the turntable mat on the platter.



Note:

After having placed the turntable mat on the turntable platter, manually rotate the turntable platter clockwise about 10 times.

This will disengage the automatic mechanism from the tonearm gear, which, in rare cases, may have moved out of its normal position during transportation.

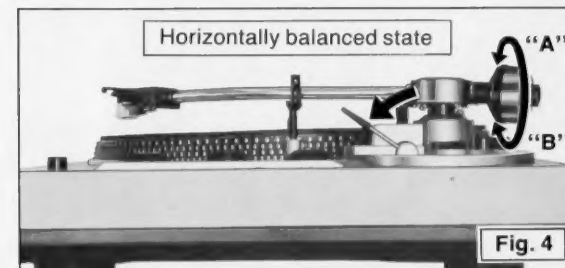
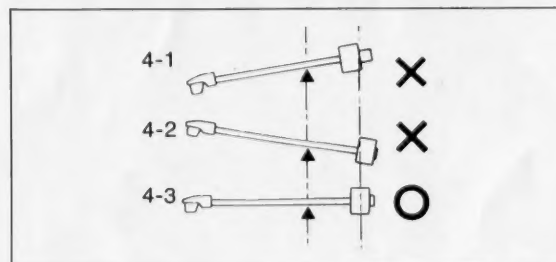
■ Installation of balance weight (See Fig. 2.)

Place the balance weight on the rear shaft of the tonearm by inserting it clockwise.



■ Adjustments of horizontal zero (0) balance and stylus pressure (See Figs. 3 and 4.)

1. Remove the stylus protector on your cartridge. Be careful not to touch your fingers to the stylus tip.
2. Release the arm clamp and lift the tonearm from the arm rest to free it.
Turn the entire balance weight clockwise (indicated by the arrow "A") or counterclockwise (indicated by the arrow "B") until the tonearm is approximately balanced horizontally (floats freely).



Note:

Fig. 4-1 Excessive forward advancement of the balance weight causes the cartridge side to be lowered.

Fig. 4-2 Excessive backward retreatment of the balance weight causes the cartridge side to be raised.

Fig. 4-3 Upon balancing between the balance weight and cartridge, the tonearm is held horizontal.

- During the adjustment of the horizontal zero (0) balance, be careful that the stylus tip of the cartridge does not contact the turntable mat or turntable base.
3. After the tonearm is horizontally zero (0) balance, temporarily refasten the tonearm with the arm clamp.
 4. Hold the balance weight stationary with one hand as shown in the picture, and rotate only the stylus-pressure ring to bring the numeral "0" of the ring into alignment with the center line on the tonearm rear shaft. (See Fig. 5.)

The adjustment of the horizontal zero (0) balance is now completed.



- After adjusting the horizontal zero (0) balance, turn the balance weight in the direction of the arrow and align to the correct stylus pressure.

(See Fig. 6.)

(The stylus pressure of the attached cartridge (EPC-74SMAD, J.C. Penney model 688-2217) is 1.75 g.)

As the stylus-pressure ring moves in step with the balance weight, proper stylus pressure can be selected by directly reading the graduated ring.



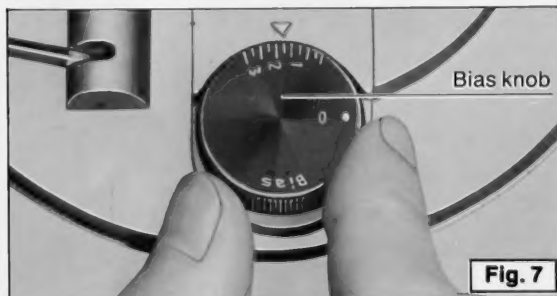
Note:

Set the stylus pressure to the maximum recommended value for your cartridge in cases where the record has an extremely high recording level, or where the unit is operated in a room at low temperature, or in places in which the unit is subjected to vibrations.

(For this unit the stylus pressure should be adjusted to 2.0 g for optimum performance.)

■ Adjustment of anti-skating

Set the bias knob to the same value as the stylus pressure. (See Fig. 7.)



■ Installation of dust cover (See Fig. 8.)

Place the dust cover into position from directly above, holding it at both sides. For detaching the dust cover, be certain first to raise it as illustrated before removal.

Note:

Opening or closing of the dust cover during play should be avoided. This may not only cause undesired vibrations, but also result in skipping of the stylus.

If you must open the dust cover during play, do so as gently as possible.



■ Placement

- Place the unit in a stable and horizontal position, where there is little or no vibration.
- Locate the unit as far away from the speakers as possible and isolate the unit from sound radiation from them.
- Do not place the unit where it is exposed to direct sun, dust, moisture or heat.
- Keep it in a well ventilated place.

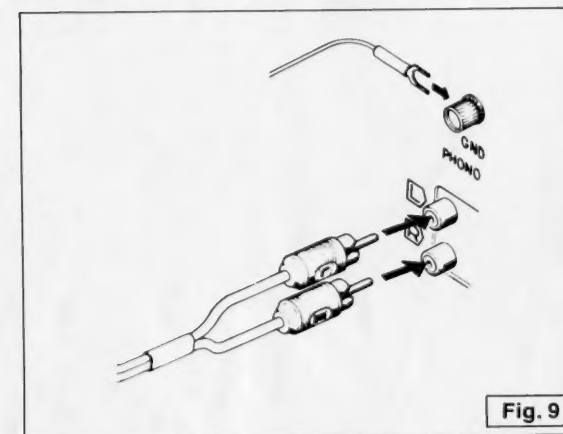
■ Connections

- Connect the AC power plug.

Connect the AC power plug to an AC wall socket or to an AC outlet on the back of a receiver with a current of 120 Volts.

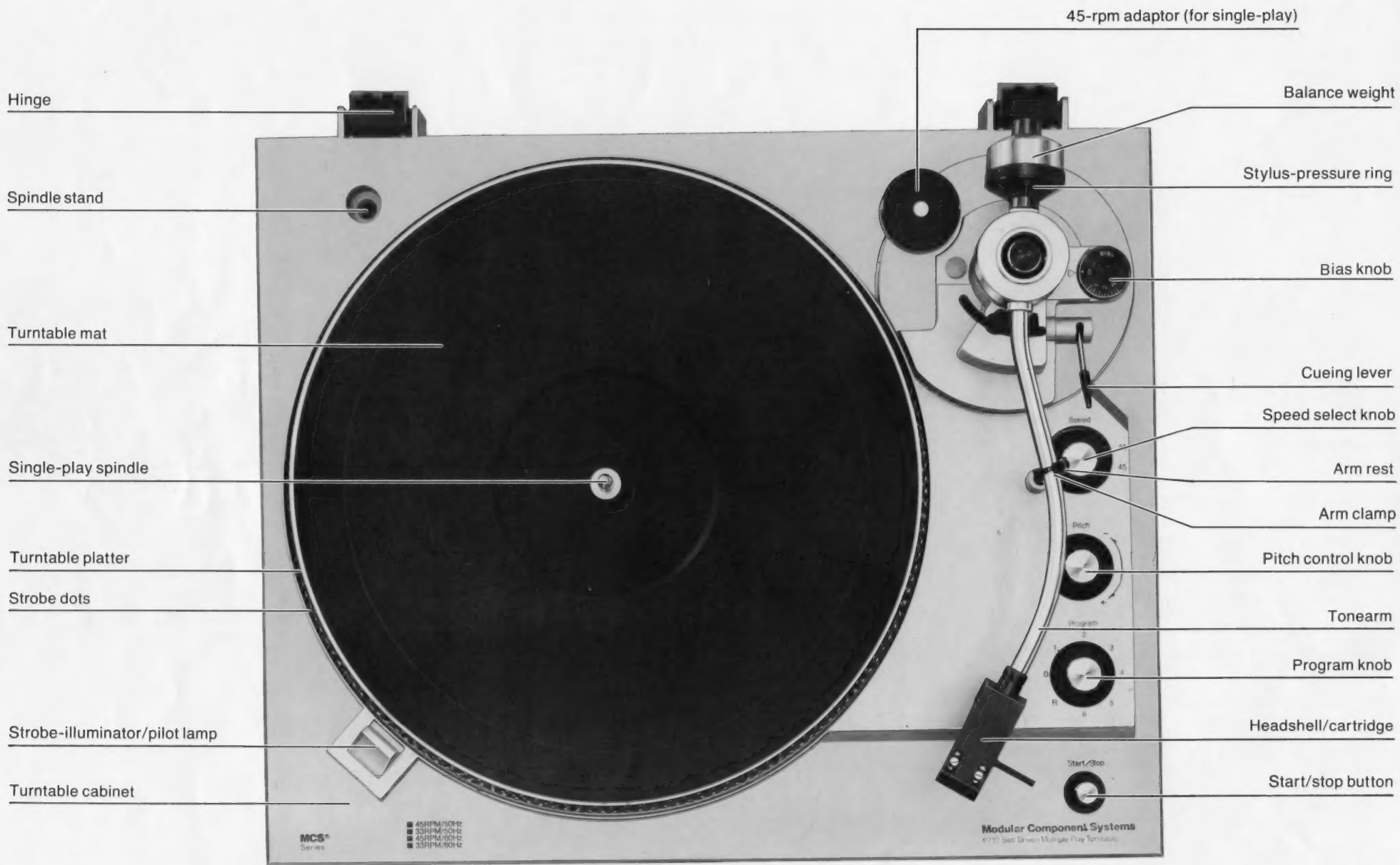
- Connect the output terminals (See Fig. 9.)

Output terminals	Amplifier or Receiver
L (White)	L Channel
R (Red)	R Channel
GND (Spade lug)	GND



Note:

Be sure to connect the ground terminal firmly to the amplifier or receiver. If this connection is not made or is loose, a power source "HUM" will result.

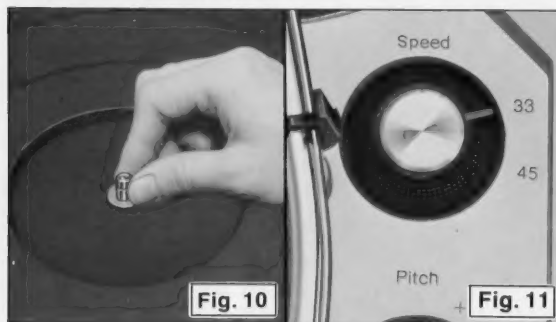


How to operate

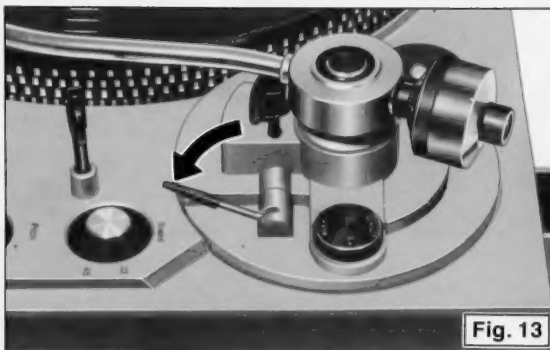
■ Single-play

■ Manual play of a record

1. Install the single-play spindle on the center spindle. (See Fig. 10.)
2. Place a record on the turntable mat.
3. Set the speed select knob to the desired record speed. (See Fig. 11.)



4. Remove the stylus protector.
5. Release the arm clamp.
6. Set the cueing lever to the "up" position. (See Fig. 12.)
7. Move the tonearm over the record and set the cueing lever to the "down" position. (See Fig. 13.)
The strobe-illuminator/pilot lamp will light-up and the turntable platter will start to rotate. The tonearm will descend slowly onto the record and play will begin.



8. When play is finished, the tonearm will automatically return to the arm rest (auto-return), and the turntable platter will stop rotation. The turntable platter will continue to rotate briefly due to its own inertia.

Note:

If the "program" knob is in a position other than "0", play will be repeated by the number of times set; therefore, be sure to keep the "program" knob in the "0" position.

Attach the stylus protector again, if you have one, to guard the stylus tip from damage.

■ Fully automatic single-play

1. Set the speed select knob to the appropriate speed of the record being played.
2. Push the start/stop button. (See Fig. 14.)



The tonearm will move automatically over the lead-in groove and descend slowly onto the record (auto-start). Play will begin.

Note:

When the speed select knob is set to "33" and push the start/stop button, the tonearm moves to play a 12" record. While you set the speed select knob to 45, the tonearm moves to play a 7" record. You can place the tonearm wherever you like if you set it manually.

3. When play has finished, the tonearm will automatically return to the arm rest (auto-return).

■ Repeat play of a single record

1. Set the "program" knob to the desired number of times you wish to play.
"R" position enables you to repeat play on a single record continuously. (See Fig. 15.)



Note:

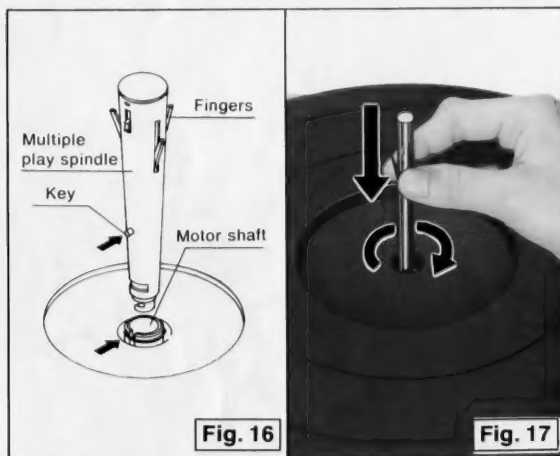
The "program" knob may be turned either clockwise or counterclockwise, except during automatic start or automatic return cycle.

The "program" knob may be set to a desired number, except during automatic start or automatic return cycle. If you start play manually while the "program" knob is set to a number, there will be an addition repeat play.

2. Start play in the same way as for fully automatic single-play.

■ Multiple-disc operation

1. Insert the multiple-play spindle, aligning the key at its base with the slot of the center spindle. Then, pushing downward, rotate the spindle clockwise until it stops. (See Figs. 16 and 17.) To remove the spindle, push it down, turn counter-clockwise until it feels loose and lifts upwards. Before removing the multiple-play spindle, always make certain that records are removed first.



Note:

Never insert or remove the multiple-play spindle when the automatic mechanism is in operation or engaged.

2. Stack records of the same size on the fingers of the multiple-play spindle. Never mix different record diameters.
3. Count the number of records stacked, then set the "program" knob to the number corresponding to the records; i.e., when you stack three records, set the "program" knob to the "3" position. (See Figs. 18 and 19.)

When you stack a single record on the multiple-play spindle, you need not set the "program" knob.

4. Start play in the same way as for fully automatic single-play.

Note:

If you want to stop play, be sure to set the "program" knob to the "0" position first, then push the start/stop button.

The tonearm automatically returns to the arm rest, and the turntable stops rotating.

If the start/stop button is pushed while there are still records on the spindle, the next record will drop. You must therefore return this record to the multiple-play spindle to play it subsequently.



■ Multiple-disc plus repeat play

Set the "program" knob to the "R" position for multiple-disc, and you can play the last record repeatedly (repeat).

■ How to stop play

Push the start/stop button.

The tonearm automatically returns to the arm rest, and the turntable stops rotating.

Of course, the unit will automatically shut off even when the tonearm is manually returned to its arm rest directly.

Note:

Before you operate the start/stop button, make sure that the "program" knob is set at the "0" position.

If this knob is set at any position other than "0" the repeat play is continued by the number of times indicated.

■ How to suspend play

Set the cueing lever to the up position.

The stylus tip of the cartridge will be lifted from the record.

●To begin play

Set the cueing lever to the down position. The tonearm will descend slowly onto the record and play will begin.

■ When you play a 45-rpm record with a large center hole

In the case of "single-play", place the 45-rpm adaptor for single-play on the regular single-play spindle.

In the case of "multiple-play", insert the 45-rpm multiple-play adaptor (optional) into the center spindle, in the same manner as the regular multiple-play spindle.

■ If the unit is not to be used for some time

Secure the tonearm with the arm clamp.

Attach the stylus protector, if your cartridge has one, to guard the stylus from damage.

Close the dust cover.

Adjustments

■ Adjustment of arm-lift height (See Figs. 20 and 21.)

The arm-lift height (distance between the stylus tip and record surface when cueing lever is raised) has been adjusted at the factory before shipping to approximately 15 mm (19/32").

If the clearance becomes too narrow or too wide, turn the adjustment screw clockwise or counterclockwise, while pushing the arm lift down.

Clockwise rotation

—distance between the record and stylus tip is decreased.

Counterclockwise rotation

—distance between the record and stylus tip is increased.

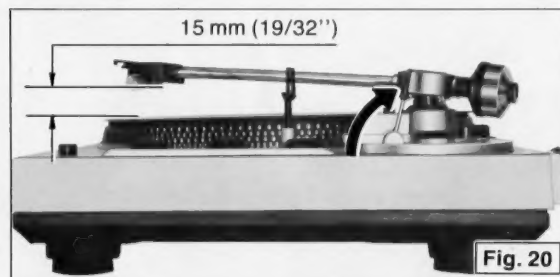


Fig. 20



Fig. 21

Note:

As the adjusting screw has a hexagonal head, be sure to make the adjustment while depressing the arm lift, or the screw will not move freely.

Also be sure that the hexagonal head retracts correctly into the arm lift when the latter is released.

■ Adjustment for automatic start position (See Fig. 22.)

(Remove the rubber cap.)

In cases where the stylus tip sets down outside of the record

—rotate the screw clockwise.

In cases where the stylus tip sets down too far in the recorded groove

—rotate the screw counterclockwise.

■ Adjustment for automatic return position (See Fig. 22.)

(Remove the turntable mat.)

In cases where the tonearm tends to return before the playing has finished.

—rotate the tonearm adjustment screw clockwise.

In cases where the tonearm fails to return after the last groove of the record has been played

—rotate the tonearm adjustment screw counterclockwise.



Fig. 22

■ Speed adjustment (with pitch control knob)

(See Fig. 23.)

Strobe dots are set on the rim of the turntable platter according to the power-line frequency and the speed of the records. Make adjustment, referring to the strobe-dot indication.

1. Set the speed select knob to the speed to be adjusted.
2. Release the arm clamp and move the tonearm toward the record with the cueing lever in the up position. The strobe-illuminator/pilot lamp will light up and the turntable platter will rotate.

In the U.S., or 120 V AC, the strobe-dots should be measured on the 60 Hz level.

3. While turning the pitch control knob either to the "+" side or "-" side, adjust so that the strobe dots of the turntable platter look as if they were stationary. This represents the correct speed.

"+" direction

The speed of the turntable platter will increase. Turn the knob in this direction if the strobe dots seem to be "falling back", i.e. seem to be moving counterclockwise. When the dots appear to be stationary, turntable speed is accurate.

"-" direction

The speed of the turntable platter will decrease. Turn the knob in this direction if the dots seem to be "running ahead", i.e. seem to be moving clockwise, until they appear stationary.

Moreover, the pitch control knob can be used for both 33-1/3 rpm and 45 rpm. Adjustment is to be made according to selected speed (33-1/3 or 45 rpm).

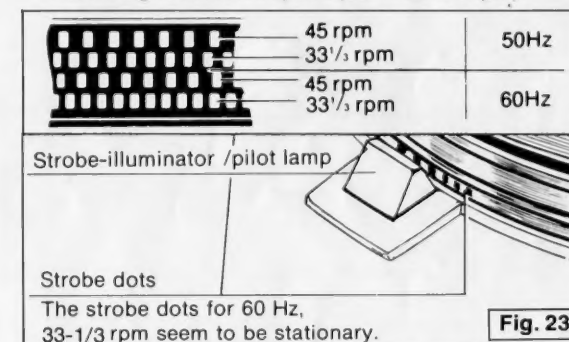


Fig. 23

Note:

Strobe dot pattern

The strobe-illuminator/pilot lamp of this unit employs the standard commercial power source. The frequency of such power source, when actually measured, has a fluctuation of about 0.2%.

As such a fluctuation of the power source affects the strobe-illuminator, the strobe dot pattern also seems to fluctuate to a certain extent. But the unit is not affected by these fluctuations of the power source, since a DC motor is employed.

In other words, rotation of the platter will be constant, and slight shifts in the movement of the dots simply reflect normal drift in the power-source frequency.

Special Note:

In the USA use 60 Hz line for 33-1/3 rpm and 45 rpm. The bottom line is used for 33-1/3 rpm when adjusting the strobe and the next line up is used for 45 rpm when adjusting the strobe. The 50 Hz is used in European countries.

Maintenance

Keep the stylus and your records clean

If the stylus is not kept clean, it will not contact the record groove properly, nor track perfectly, resulting in sound deterioration as well as damage to both the record and the stylus tip.

Be especially careful to clean away all dust and dirt from the stylus tip with a soft brush or blower. **DO NOT USE YOUR FINGER. YOU MAY DAMAGE THE STYLUS.** We recommend having your stylus checked periodically by J.C. Penney Store. Remember, a worn or damaged stylus can permanently damage your record collection.

Attach the stylus protector when not in use, and keep the turntable dust cover closed both when playing a record and when the turntable is not in use.

Records should be kept free of dust and finger marks, and stored in their protective jackets when not in use. Records not kept clean will cause scratchy sound, and deterioration of the record and stylus. Clean your records regularly with a record cleaning kit available at J.C. Penney.

■ Wipe the dust cover and turntable base with a soft, dry cloth.

Never use any cleaners containing alcohol, benzine or thinner. Use of a chemical dust cloth should also be avoided. Be sure that the dust cover is not exposed to insecticide spray.

To remove stubborn finger prints or grease spots, detach the dust cover and disconnect the AC power plug.

Use a soft cloth slightly moistened with a mild soap and water solution.

Do not wipe the dust cover during play, or the tonearm may be attracted toward the dust cover due to the generation of static electricity.

Care

In the Event of Trouble

Hum . . . Your turntable utilizes a DC motor to reduce inductive hum. If annoying inductive hum is heard, it can be caused by the electromagnetic field produced from the motors or transformers used in another device. Do not place the turntable near a device in which a motor or transformer is used. To prevent the turntable from being affected by the power transformer of your amplifier, receiver or tape deck, place the turntable on the opposite side of the power transformer.

Acoustic Feedback . . . Cartridges are very sensitive and may pick up slight sound pressure or vibrations of the speaker coming along the floor or even though the air is close enough. Therefore, the location of your turntable is very important. See paragraph "placement" on page 5.

Automatic mechanism . . . While moving the tonearm toward the record, there may be cases where the tonearm tends to return to the arm rest.

In such a case, rotate the turntable platter clockwise about 10 times.

This will disengage the automatic mechanism from the tonearm gear, which in rare cases may have moved out of its normal position during transportation.

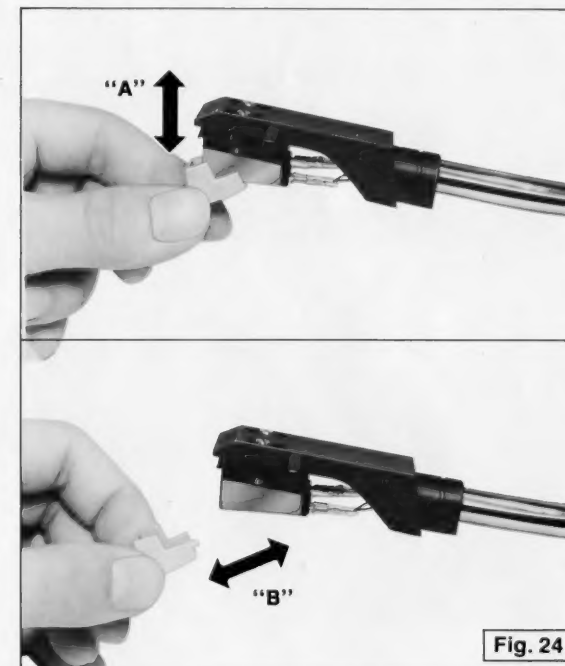
Service . . . Contact your J.C. Penney store or Product Service Center if any service is ever necessary.

Replacement

■ Replacement of the stylus. (See Fig. 24.)

Note:

- The stylus will give you many hours of listening pleasure.
 - To prevent damage to your records it should be replaced at the first sign of wear.
 - Noise or scratchiness may indicate a worn or damaged stylus.
1. Raise the forward end of the tonearm, with the arm clamp detached.
 2. Carefully grasp the stylus assembly and lower its top portion as shown in illustration "A", then pull it as shown in "B".
 3. Be careful not to touch the stylus tip and install the new one in the reverse order like "B" to "A".



Specifications

General

Power supply	120 V AC, 60 Hz
Power consumption	3 W
Dimensions	17.6×43×37 cm
(H×W×D)	(6-17/32×16-15/16× 14-9/16 inches)
Weight	5.0 kg (11.0 lbs)

Turntable section

Type	Automatic turntable with, Frequency Generator Servo Automatic start, Automatic return, Automatic shut-off, Repeat play with convenient "Program" knob and Multi-play
Drive method	Belt drive
Motor	Frequency Generator Servo DC motor
Turntable platter	Aluminum die-cast, 30.4 cm (12")
Turntable speeds	33-1/3 and 45 rpm
Pitch controls	6% adjustment range
Speed change method ..	Electronic change
Wow and flutter	0.05% W.R.M.S. (JIS C5521) ±0.08% peak (IEC 98A Weighted)
Rumble	-65 dB (IEC 98A Unweighted)

Tonearm section

Type	"S" shaped tubular arm, Semi-integrated type
Effective length	230 mm (9-1/16")
Overhang	15 mm (19/32")
Tracking error angle	Within 2°32' [at the outer groove of 30 cm (12") record] Within 0°32' [at the inner groove of 30 cm (12") record]
Offset angle	22°
Adjustable stylus pressure range	0 to 3 g
Cartridge weight range	6 to 8 g

Cartridge section

Type	Moving magnetic stereo cartridge EPC-74SMAD (AT71) J.C.Penney Model 688-2217
Frequency response	20 Hz to 25 kHz
Output voltage	2.5 mV 1 kHz, 5 cm/s. zero to peak lateral velocity (7 mV 1 kHz, 10 cm/s. zero to peak 45° velocity [DIN 45 500])
Channel separation	More than 22 dB at 1 kHz
Channel balance	Within 2 dB at 1 kHz
Load impedance	47 kΩ to 100 kΩ
Stylus pressure	1.75±0.25 g
Replacement stylus	EPS-74STSD (ATN 71) J.C.Penney Model 688-2227

You can also use the ATN71 replacement stylus which is sold by audio-technica U.S., Inc.

Specification subject to change without notice.
Weight and Dimensions shown are approximate.

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